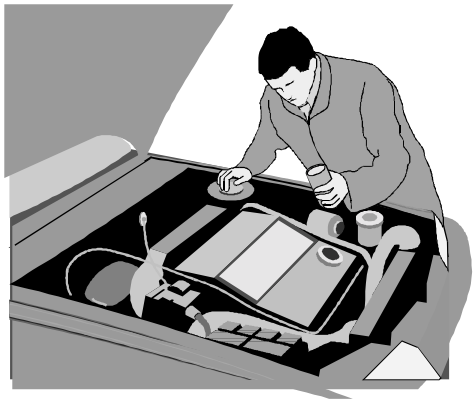

Preventing Pollution in the Vehicle Maintenance Industry

A Guide to Environmental Compliance and Pollution Prevention for Vehicle Repair Shops in Missouri

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Technical Assistance Program
1-800-361-4827

PUB000799

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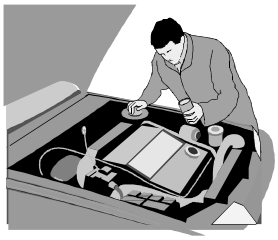
These guide sheets were reviewed by representatives of the Automotive Service Association (ASA) of Missouri and two independent Jefferson City automotive service providers. Their assistance is very much appreciated.



Preventing Pollution in the Vehicle Maintenance Industry

As environmental protection becomes more and more important across the nation, industries of every type are faced with some big questions --

What environmental regulations apply to me and my facility?
How do I comply with those regulations?
Are there things I can do to reduce the regulations I must comply with?
How can I protect myself from fines and liability?
How do I protect myself and my workers from environmental hazards in the shop?

This publication was developed to help vehicle maintenance shops in Missouri answer some of those questions. The guides provide basic information about regulatory requirements and suggestions for protecting yourself, your workers and the environment through pollution prevention.

Each guide sheet in this publication deals with a separate issue that you may face in your vehicle maintenance shop. The guides may not answer every question you have, but after reviewing them you should be able to decide if you need more information or assistance on a particular issue. The topics are listed on the back of this page.

The Missouri Department of Natural Resources has a Technical Assistance Program (TAP) to help people like you comply with environmental regulations and find ways to prevent pollution. If you need assistance, call TAP at 1-800-361-4827.

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Guide Sheets for Vehicle Maintenance Industry

Air-Conditioning Refrigerant
Antifreeze
Bar 90 Emissions Testing
Brake Fluid
Brake Repair
Catalytic Converters/Mufflers
Floor Cleaning
Floor Dry/Absorbents
Fluorescent Bulbs
Fuel Tanks
Hazardous Wastes
Hoses and Gaskets
Lead-Acid Batteries
Parts Washers
Pollution Prevention
Radiators
Shop Towels
Storage Tanks
Used Oil Disposal and Recycling
Used Oil Filters
Used Oil from Do-It-Yourselfers
Used Oil Storage
Waste Tires
Waste Tire Collection Center
Wastewater

If you have comments or suggestions for ways to improve these guide sheets, please contact the DNR's Technical Assistance Program at 1-800-361-4827.

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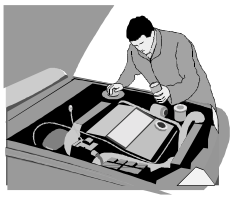
May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #2

POLLUTION PREVENTION



Vehicle maintenance shops deal with many things that can affect the environment. Materials such as waste oil, antifreeze, and air-conditioning refrigerant (just to name a few) can harm the environment and people if they are not properly managed. State and federal environmental regulations explain what legally can and cannot be done with these materials. The regulations describe how pollution (waste) should be controlled, stored, treated or disposed of. But a better solution is to prevent the waste or pollution.

WHAT IS POLLUTION PREVENTION?

Pollution prevention is simply not making the waste (or pollutant) in the first place. It means doing what we can to reduce the amount and toxicity of the pollution we generate. Preventing pollution may be something as simple as using a catch-basin to prevent spills, or something as complex as redesigning your operation to increase efficiency and reduce waste. Simple things like choosing non-hazardous solvents can protect the environment and reduce the number of environmental regulations you are faced with. Pollution prevention means thinking about the environmental impact of your actions, and trying to limit that impact.

WHY PREVENT POLLUTION?

When we generate waste or pollution, we must safely and legally manage that waste or pollution. Whether it is household trash or waste from a business, managing wastes costs money. And usually the things we discard are materials we paid for when we got them. A good example is paper towels. We buy them, use them once, then pay again to have them disposed of. If we reduce the amount of waste we generate, we save money. It's as simple as that. Reducing costs is a major reason to prevent pollution. Here are a few others -

✔ Improved work environment and worker safety.

✔ Reduced liability.

✔ Increased efficiency.

✔ Fewer regulatory requirements.

✔ Better environmental protection.

✔ Enhanced marketing and public relations opportunities.

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WHAT CAN BE DONE AT VEHICLE MAINTENANCE SHOPS?

There are many ways to prevent pollution at vehicle maintenance shops. Each of these guide sheets has suggestions on ways to prevent pollution. Here are a few general tips:

√Keep work areas clean and well organized to help prevent accidents.

√ Use drip pans and splash guards where spills frequently occur.

√ Fix leaks immediately.

√ Don't buy more than you need. The leftovers may become waste.

√ Purchase the largest practical container (containers usually end up as waste), but don't purchase more than you need.

√ Purchase the least toxic or hazardous product available. Check the material safety data sheets for products your purchase. If the product is toxic or hazardous, ask your supplier for alternatives.

√ Use the oldest items first (first-in, first-out).

√ If you do have excess or unneeded materials, see if your supplier can take them back

√ Include the cost of disposal when you make purchasing decisions. What looks like the cheapest option may cost more because of disposal or other management costs.

√ Store materials in a way that keeps them from being damaged.

√ Inspect storage areas regularly for leaks.

√ Make sure all items are clearly labeled. Store products in original containers.

√ Store wastes separately and be sure they are properly labeled to make it easier to reuse or recycle them.

√ Store items that could leak in a place where leaks will be contained and easily spotted.

√ Make a list of your wastes. Then try to find a way to eliminate each of them. For example, if you throw away paper towels, consider using launderable shop rags.

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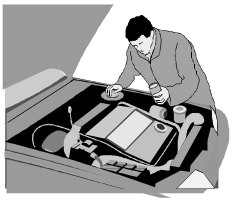
Preventing Pollution in the Vehicle Maintenance Industry - #3

AIR-CONDITIONING REFRIGERANT



The common refrigerant used in automotive air-conditioning (a/c) units is chloroflurocarbon-12, also known as CFC-12, R-12, or Freon. In December 1995 production of CFC-12 in the United States ended. CFC-12 can still be used, but it is no longer produced.

CFC's are chlorine-containing compounds that react with sunlight in a way that destroys the protective ozone layer in the earth's atmosphere. This allows the amount of ultraviolet (UV) radiation reaching the earth's surface to increase. Overexposure to UV rays may cause skin cancer, eye cataracts and a weakened immune system.

If you service, repair or open an a/c system, you must contain all of the refrigerant using equipment approved by the Environmental Protection Agency (EPA). If you replace an a/c unit you must recover the refrigerant before discarding or recycling the a/c unit. Technicians servicing motor vehicle a/c systems must be trained and certified by an organization approved by EPA. This is the law according to Section 609 of the 1990 Clean Air Act Amendments (CAAA).

In Missouri, you are not required to repair leaking a/c systems. When you find a leak, you should present the customer with all options, including repair of the leak. If the customer does not want the leak repaired, you may refill the system with refrigerant if the customer asks you to. If you have added refrigerant to detect the leak, you are required to recover and recycle that refrigerant unless the customer asks you to leave it in the system.

If an a/c system needs a major repair, you might suggest that the customer consider having the system retrofitted to use an EPA-approved alternative refrigerant. Currently hydrofluorocarbon-134a, also known as HFC-134a and R-134a, is the only alternative to CFC-12 approved by EPA and fully tested and specified by auto manufacturers in their retrofit guidelines. HFC-134a does not contain chlorine so it does not damage the ozone layer. Some mixtures of air and HFC-134a are combustible at high pressure, so do not use compressed air to test equipment using HFC-134a.

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RECYCLING - When recycling refrigerant DO NOT MIX CFCs and HFCs. Recycle these separately. Do not add alternate refrigerants (HFCs) to a system using CFC-12. Under federal law, recycled or reclaimed refrigerants are not hazardous if they are not mixed.

EMPTY CONTAINERS - It is a good idea to label empty containers with the word "EMPTY." Check with your supplier to see if the containers can be returned for reuse or recycling. If that is not possible, dispose of empty containers in the landfill.

LABELING - Federal law requires labeling of products containing ozone-depleting susbstances such as CFCs. Therefore, CFC-12 a/c units, refrigerant equipment and any containers must be labeled clearly. The label must read "WARNING Contains CFC-12, a substance which harms public health and the environment by destroying ozone in the upper atmosphere."

An a/c system retrofitted to use an alternate refrigerant must have a label telling what refrigerant is in the system.

REMEMBER

You must be trained and certified before you can work on a motor vehicle a/c unit.

When working on an a/c unit, you must use EPA-approved recovery/recycling or recovery equipment.

Never mix CFCs (CFC-12, R-12, Freon) with HFCs (HFC-134a, R134a) either in an a/c unit or in the recovery equipment.

Label all equipment and containers that contain CFC.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ When a leak is found, present the customer with all options. Repair can prolong the life of the a/c unit, decrease emissions and conserve existing supplies of CFC-12.

√ When major repairs are needed, suggest the customer consider retrofitting to use an alternative refrigerant.

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Preventing Pollution in the Vehicle Maintenance Industry - #4

ANTIFREEZE

Antifreeze is usually made of ethylene glycol, corrosion inhibitors and foam controllers. Ethylene glycol is toxic if ingested. It can be particularly hazardous because animals and children may be attracted to its sweet flavor. If they drink the ethylene glycol it could cause coma or death. Some antifreeze is made of propylene glycol. This material is less hazardous to humans and animals than ethylene glycol.

The used antifreeze from a vehicle can hold contaminants that it has picked up from the vehicle engine. For example, used antifreeze may contain lead because the antifreeze has dissolved some of the lead solder in the radiator. Waste antifreeze is not a listed hazardous waste under the federal hazardous waste regulations, but it MAY be a hazardous waste depending on the contaminants it has picked up. The test used to find out if used antifreeze is a hazardous waste is called the Toxicity Characteristic Leaching Procedure (TCLP). See the guide sheet on hazardous waste for more information.

Recent studies have shown that antifreeze from late-model cars and trucks is not hazardous waste. This is primarily due to reduced use of lead in radiator construction. Used antifreeze is more likely to be hazardous if it was used in heavy equipment such as bulldozers and buses.

If the waste antifreeze in your vehicle maintenance shop is primarily from late-model cars and trucks you can apply knowledge of the waste rather than testing the antifreeze. This means that if you know the antifreeze is from late-model cars and trucks, and you know that no other hazardous wastes have been mixed with it, you know without testing that the waste antifreeze is not hazardous.

If you have used antifreeze from heavy equipment or industrial sources, you will need to have the antifreeze tested to see if it is hazardous waste unless you have some other way of knowing that it is or is not hazardous.

There are several ways to safely and legally manage your used antifreeze. You can

✓ recycle the antifreeze at your shop (onsite recycling),
✓ send the antifreeze to someone else to either recycle or dispose of it (offsite recycling or disposal), or
✓ discharge to public wastewater treatment plant **if** the plant has approved the discharge.

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Recycling. DNR strongly encourages antifreeze recycling. You can purchase or lease several types of antifreeze recycling equipment.

Recycling hazardous wastes on-site requires a type of approval from DNR called resource recovery certification. If you service only late-model cars and trucks, you are **NOT** required to get a resource recovery certification for recycling antifreeze on-site. If you service heavy equipment and want to recycle the antifreeze at your shop, you must get a resource recovery certification. Contact DNR at 1-800-361-4827 for more information.

Your recycling unit will create waste such as distillation residues and used filters. You must determine if these wastes are hazardous before disposal. See the guide sheet on Hazardous Waste for more information. If the residue is non-hazardous, it can be sent to the landfill with your regular trash. However, liquids cannot go to the landfill.

There are businesses who will bring equipment to your facility and recycle your antifreeze on-site. If your antifreeze is from late model cars and trucks, these companies do not need resource recovery certification. If you service heavy equipment, these companies will need resource recovery certification to recycle your antifreeze.

Off-site Recycling or Disposal. There are companies that pick up used antifreeze for off-site recycling or disposal. If your used antifreeze is a hazardous waste, the transporter must have a Missouri license to transport hazardous waste, and the waste must have a hazardous waste manifest with it. Make sure the facility you send it to has a resource recovery certification or a hazardous waste treatment, storage and disposal permit.

Discharge to wastewater treatment plant (pouring it down the drain). If the drains at your shop go to a wastewater treatment plant (not a septic system), you MAY be able to pour antifreeze down the drain **IF** you have permission from the plant. Pouring something down the drain is called a discharge. Some plants will not allow discharges of used antifreeze. Large quantities can harm the treatment plant. Also, the wastewater treatment plant may not be able to remove all the contaminants from the used antifreeze. The contaminants then enter lakes, streams and rivers.

✓ **DO NOT** discharge antifreeze to a wastewater plant without permission.
✓ **DO NOT** discharge any hazardous waste, including antifreeze, to a septic system.
✓ **DO NOT** dispose of antifreeze in or on the ground, down storm drains or into streams or lakes.

POLLUTION PREVENTION

√ Make sure hoses, gaskets and seals are in good condition.
√ Replace antifreeze only when necessary.
√ When good antifreeze must be removed for repairs, save it and reuse it in the system.

For more information call 1-800-361-4827 or write to
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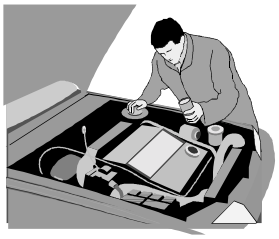
Preventing Pollution in the Vehicle Maintenance Industry - #5

BAR 90 EMISSIONS TESTING



Gasoline powered vehicles give off gases that can cause air pollution. This can be a particular problem in the St. Louis area because that area has significant air pollution. To help improve air quality, vehicles in the City of St. Louis and the counties of St. Louis, St. Charles and Jefferson must have special emissions testing, called BAR90 (BAR stands for the Bureau of Automotive Repair and 90 refers to the 1990 criteria).

The gases from vehicles that cause concern are carbon monoxide (CO) and hydrocarbons (HC). Carbon monoxide is a pollutant by itself. Hydrocarbons combined with other gases react in the sunlight to form ground-level ozone. While ozone in the upper atmosphere helps protect us from harmful UV rays, ozone near the ground can harm people, animals and plants, and it can harm many man-made products.

Because ground-level ozone can be harmful, the Environmental Protection Agency has set standards for how much ozone is acceptable in the air. The air in cities is monitored to find out how much ozone and other contaminants are present. The St. Louis area has had high levels of ozone in the air, so it is designated as an ozone nonattainment region. Because it is a "nonattainment" area, the St. Louis area has strict requirements for activities that can generate air pollution. By reducing emissions, the air quality can be improved.

One way to reduce emissions and improve air quality is to reduce the gases given off by vehicles. The BAR90 Emissions Testing is used to find out how much carbon monoxide and hydrocarbons a vehicle emits. Just as with traditional vehicle safety inspections, a vehicle must pass the emission test in order to be registered by owners living in St. Louis City, St. Louis County, St. Charles County and Jefferson County. In those areas, gasoline-powered cars and trucks less than 8500 pounds in gross vehicle weight (GVW) must have an emissions test, as well as a safety inspection. The Missouri State Highway Patrol, Motor Vehicle Inspection (MSHP-MVI) program oversees the operation, interpretation and enforcement of both emissions and safety requirements.

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Only BAR90 certified analyzers (analyzers meeting 1990 criteria based on federal guidelines) can be used in Missouri to perform emissions testing. Four analyzers are certified for use in Missouri. The suppliers and their analyzers are

- Automotive Diagnostics (ALLEN and BEAR),
- Analyzed Electronics (ESP or HAMILTON),
- and Snap-on/Sun Electronics (SUN).

The analyzer allows an inspection facility to perform both safety and emission inspections. The computer generates the vehicle inspection certificate for the citizen. Safety items are visually inspected and measured by the mechanic. Emissions testing requires the analyzer to determine the concentration of hydrocarbons (HC), carbon monoxide (CO) and carbon dioxide (CO2) in the vehicle exhaust, with established pass/fail criteria based on vehicle model year. The analyzers are also equipped with an oxygen (O2) sensor, which can be used to aid in the diagnosis and correction of a vehicle's emission problems.

The state gathers information from each analyzer to help in improving the inspection program, for both safety and emissions. Staff from the state also check all analyzers to make sure the equipment is working correctly. The analyzer is "locked out of service" if it fails to meet certification criteria. It is placed back in service when its equipment and performance pass a reaudit.
Questions concerning the safety and emissions testing program should be directed to either MSHP-Troop C at (314) 340-4041 or DNR at (314) 432-3328.

POLLUTION PREVENTION OPTIONS

Preventing pollution can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Regular maintenance will prevent poor gas mileage and decrease pollutant emissions. Routinely check and maintain the following items: tire pressure is at manufacturers specifications, oil changes are at manufacturers recommended weight and frequency, vacuum hoses are all attached, the preheat tube is whole and attached, the PCV valve is working (rattles), and the catalytic converter(s) are in place and functioning.

√ Prior to testing, the following items should be checked: air filter is clean, timing is correctly set, spark plugs are clean and gapped correctly, spark plug wires are good and solidly seated on the spark plug and any "miss" when the vehicle is at idle is corrected.

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Preventing Pollution in the Vehicle Maintenance Industry - #6

BRAKE FLUID

Brake fluid used in vehicles is a mixture of polyglycol and glycol ethers with additives to inhibit oxidation and corrosion. Because it is a petroleum derivative and is used for hydraulic power transmission it is defined as used oil in Missouri. If you generate waste brake fluid at your vehicle maintenance shop, you must handle it according to Missouri's Hazardous Waste Law and rules. Improper disposal of used brake fluid can cause damage to soil and surface water and pose a risk to human health.

In Missouri, it is against the law for anyone to dispose of brake fluid or any used oil into the environment. That means you cannot use it as a dust suppressant or pour it out onto the ground. Also, you cannot legally dispose of brake fluid or any used oil in a landfill in Missouri**.**

Brake fluid and other used oil is regulated as a hazardous waste unless it is recycled. You may mix your waste brake fluid with your other used oil, or you may handle the wastes separately. See the guide sheets on Used Oil and on Hazardous Waste for more information on how to manage this type of waste.

One problem that can arise is contamination of brake fluid with chlorinated compounds. Many brake cleaners or solvents contain chlorinated compounds. These can get into used brake fluid, causing it to need more expensive hazardous waste management. Also, some older brake fluids may have been manufactured using chlorinated compounds. If your brake fluid contains chlorinated compounds and you mix your brake fluid with your used oil for recycling it may be impossible to recycle your oil or use it as fuel. Check with your recycler to find out what level is unacceptable. You may wish to use a test kit to check used brake fluid for chlorinated compounds.

One way to avoid contamination is to use cleaners that do not contain chlorinated materials. If that is not possible, take care to avoid mixing the cleaning fluids with the waste brake fluid.

If you use an on-site oil burner to manage your used oil, check with the supplier or manufacturer to find out if burning brake fluid in the unit will cause problems. Burning glycol compounds could cause smoke or fumes. Keep track of any times brake fluid is burned in the unit to see if it causes a problem, and avoid burning the fluid in your burner if smoke or fumes result.

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REMEMBER

Used brake fluid is considered a used oil.

Used brake fluid is a hazardous waste unless it is recycled.

Check with the manufacturer of your oil burner before burning brake fluid with your used oil. Don't burn brake fluid if it creates smoke or fumes.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Carefully drain brake fluid into proper drip pans to prevent spillage during emptying and transfer.

√ Clean up spills as soon as possible with proper absorbent.

√ Take care not to mix chlorinated cleaners or solvents with brake fluid or used oil.

√ Educate do-it-yourselfers not to mix chlorinated materials with their used oil.

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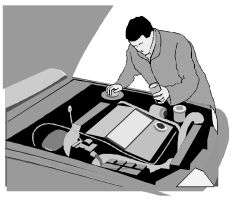
Preventing Pollution in the Vehicle Maintenance Industry - #7

BRAKE REPAIR



Vehicle brake pads and brake shoes are commonly made with material containing asbestos. The dust that accumulates in the brake area contains very small asbestos particles, a substance which is known to cause cancer.

Although the Missouri Department of Natural Resources does not have regulations which require you to use particular practices when repairing brakes, you should be very careful to keep asbestos-containing brake dust out of the atmosphere.

When you remove the brake pad or shoe from the brake, vacuum the brake dust. Do not blow it off with an air hose. Have a vacuum and disposable bag that you use only for brake dust, so that when the bag is full you can seal it for disposal. Since small asbestos particles may escape, it is a good idea to wear a breathing mask approved for filterable particulate material.

When brakes are bled, try to catch all the brake fluid. See the guide sheet on Brake Fluid for information on how to manage the waste fluid. If possible, avoid using chlorinated solvents for cleaning brakes since it can contaminate the brake fluid and make it difficult to recycle.

Separate used brake pads or shoes from your other trash. The recommended practice is to wrap the old pads or shoes in plastic bags, then put the bagged material into a sealed container, labeled for used brake material only. The dedicated vacuum bag should also be placed in the container. When the container is full, notify your trash collection service that you have asbestos-containing material to be picked up. The service may want to pick up the material separately from your regular trash, depending on how the local landfill operates.

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REMEMBER

Brake pads and shoes may contain asbestos.

Try to control dust (which may contain asbestos) by using a vacuum instead of an air hose.

Keep asbestos waste separate from other waste.

Place asbestos waste in plastic bags, then into a sealed container, and label it.

Notify your waste hauler that you have asbestos-containing waste.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Try brake pads and shoes which do not contain asbestos.

√ Vacuum brakes; don't blow dust into the air.

√ When bleeding the brake system, capture all the brake fluid and use a clean container so that any waste can be recycled.

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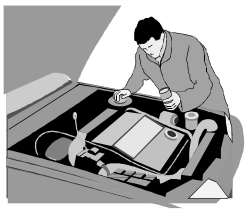
Preventing Pollution in the Vehicle Maintenance Industry - #8

CATALYTIC CONVERTERS/ MUFFLERS



Mufflers and catalytic converters which are removed from a vehicle are usually managed by the vehicle maintenance shop. These items are made of metals which can be readily recycled.

Used mufflers and catalytic converters contain metals which can be processed as regular scrap metal. Catalytic converters from the exhaust systems of newer automobiles contain a metal, platinum, which has a higher value than steel. Some scrap metal recyclers will pay more for catalytic converters. You may want to consider recycling catalytic converters separately from other exhaust system parts to get a better price.

Although Missouri does not have environmental regulations dealing with waste mufflers or catalytic converters specifically, you should take care to manage them in a way that will not cause a public nuisance or cause harm to the environment or public health.

If you store scrap metals outside, you will need to be particularly careful. What looks like a storage pile to you may look like a "dump" to someone else. To avoid potential problems, be careful that other wastes are not mixed with scrap metal and set up a regular schedule for removal. Check on city and county ordinances that may have requirements for storing materials outside. Also, you may wish to store catalytic converters separately from other scrap metal so they will not be sent to ordinary scrap metal recycling by mistake.

REMEMBER

If you have a scrap pile, be sure it doesn't become a "dump." Set up a schedule for collection, and keep recyclables separate from other materials.

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POLLUTION PREVENTION OPTIONS

Preventing pollution, instead of treating or disposing of it, can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Follow routine scheduled maintenance.

√ Check clearance on hoist lift arms before raising the vehicle to prevent damage to exhaust system parts.

√ Check the exhaust system whenever the vehicle is on a hoist lift. Check for broken or damaged exhaust pipe hangers which could cause a muffler to drag and become damaged.

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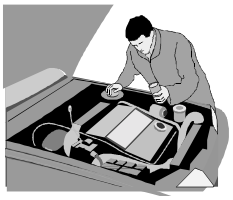
Preventing Pollution in the Vehicle Maintenance Industry - #9

FLOOR CLEANING



Floor cleaning at vehicle maintenance shops can have an environmental impact depending on the methods or procedures used. Floor cleaning is also important from a customer relations standpoint.

The most important step in preventing environmental problems from floor cleaning is to prevent spills. Use drip-pans to catch fluid spills. Place wastes to be disposed of or recycled in proper containers. If you do have a fluid spill, clean it up immediately with the appropriate absorbents.

The first cleaning step should be to dry sweep the floor to remove loose, dry materials from the floor. If you have allowed hazardous materials to fall on the floor, it is possible that these sweepings could be hazardous waste. For example, sludges from cooling systems may contain heavy metals such as lead. If these sludges are mixed with floor sweepings, the sweepings could be contaminated with lead. If these sweepings are contaminated they will have to be tested and managed accordingly if they are hazardous. See the guide sheet on Hazardous Waste.

When washing the floor, do not use caustic cleansers or solvents that can cause damage to a public sewer and treatment system or to a private septic system. Biodegradable soaps are available and are usually gentler on both these systems. Be particularly cautious if your shop is not connected to a public sewer system. Septic systems can be seriously harmed by some chemicals. If your facility is connected to a public sewer and wastewater treatment system, contact that treatment facility to explain the materials you handle and ask if they can accept the wastewater you generate. There may be local regulations restricting what you can pour down the drain and discharge into the sewer system.

Do not discharge washwater to the outdoors. If you release wastewater off your property, you could be in violation of Missouri's laws.

Avoid hosing off the floor when dry sweeping is possible. Hosing off the floor uses a great deal of water, creates a greater risk of pollution and is typically not effective for cleaning oils and greases.

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REMEMBER

If listed hazardous wastes are mixed with floor sweepings, all of the material is hazardous waste.

Contact local sewer plants to find out about local requirements for wastewater discharged to them.

Do not discharge wastewater outdoors.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Prevent spills and clean up spills immediately.

√ Pre-clean the floor with a dry broom.

√Use biodegradable soap and water to do final cleaning.

For more information call 1-800-361-4827 or write to
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Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #10

FLOOR DRY/ ABSORBENTS

Many vehicle maintenance facilities use absorbents (sometimes called floor dry) to clean up small spills. Once these materials are used, they may require special handling.

If an absorbent is used to clean up oil, it is called an oily waste. You may send your oily waste to a sanitary landfill ONLY IF
- it does not contain any unabsorbed liquids, and
- it does not contain any hazardous waste.

You should check with your landfill and hauler before sending oily wastes in the trash. The landfill or hauler may require special handling or paperwork, or they may refuse to accept the waste.

If you use an absorbent to clean up spills of a listed hazardous waste, the contaminated absorbent is then a hazardous waste. In that case, you must follow hazardous waste requirements for storage, transport and disposal of the absorbent. (See guide sheet on Hazardous Waste.)

Disposing of used absorbent can be difficult and expensive. It makes good sense to reduce the amount of absorbent waste as much as possible. The best way to reduce your absorbent waste is to avoid spills or leaks. The proper and frequent use of drip pans is essential in trying to do this.

Make sure drip pans are large enough to hold the amount of liquid that may leak. Use pans that cannot be easily tipped over. When you remove oil-laden parts, placing them in a drip pan will keep the oil off the floor and allow you to recycle it. Use separate drip pans for different types of liquids (oil, antifreeze, etc.) to avoid contaminating your recyclable liquids.

If you must use absorbent, sprinkle only as much as is needed. You may be able to reuse some absorbent if it is not saturated. Keep partially-used absorbent in a separate container for future use until completely saturated.

You may want to consider alternatives to floor dry absorbents. Special oil absorbent mops are available which may be reused and from which used oil can be wrung and recycled. Absorbent socks may also be used and wrung out. Possible sources for these products are listed below.

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Contact your supplier of shop towels or absorbents to see about getting reusable absorbent socks or booms. Here are some possible sources:

(DNR does not endorse the following companies or their products, but merely provides this information as a service to Missouri citizens.)

Oil Mop
P.O. Box 51271OCS
Lafayette, LA 70505-1271
(318) 237-5300
(800) 645-6671

Environmental Solutions
147 30th St. Drive, S.E.
Cedar Rapids, IA 52403
(319) 364-1099
Sell a variety of absorbent materials

New Pig Corporation
One Pork Avenue
Tipton, PA 16684-0904
(800) 684-0101
Sell absorbent "socks"

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it, can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Minimize or eliminate the use of floor dry absorbents.

√ Use drip pans to prevent spills as much as possible.

√ Store used drip pans so they don't drip, leak or spill.

√ Consider alternative absorbent materials such as mops or socks.

For more information call 1-800-361-4827 or write to
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May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #11

FLUORESCENT LAMPS

Fluorescent, high-pressure sodium, mercury vapor, metal halide, neon and high intensity discharge lamps contain mercury, as well as other toxic metals. Unbroken lamps pose no threat to human health and the environment. However, when they are broken, people may be exposed to toxic levels of mercury vapor and other metals that can be easily inhaled.

Hazardous vs. non-hazardous lamps
Mercury-containing lamps are likely to be hazardous. There are two methods to determine if lamps are hazardous:

1. Test the waste. The test to find out the toxicity of lamps is the Toxicity Characteristic Leaching Procedure (TCLP). An environmental laboratory can do this. Hazardous levels are published in *40 Code of Federal Regulations 261.24*. For mercury, the level is 0.2 milligrams per liter (mg/l). For lead, it is 5 mg/l. Levels are given for other toxic metals. If the TCLP metal levels are below these levels, the lamp is not hazardous.

2. Apply knowledge of the hazardous characteristic. Lamp manufacturers may be able to provide data that show the toxic metal levels for the lamps you use. Some people assume their lamps are hazardous to avoid the cost of testing. If the toxic metal levels are unknown, assume the lamp is hazardous.

Non-hazardous lamp management
Some manufacturers produce "low-mercury" lamps, which may not be hazardous for mercury but they still contain small amounts of mercury. If your lamps are non-hazardous, you may send them to a lamp recycler or a Missouri sanitary landfill.

Small number of hazardous lamps
If your business is a conditionally exempt generator of hazardous waste and you generate one or two hazardous lamps infrequently, you may dispose of them in a Missouri sanitary landfill although collection for recycling is recommended.

Before landfilling any lamps, contact the landfill operator for permission. The operator may refuse any waste, or ask for evidence the lamps are not hazardous. Before disposal, put the lamp in the box the replacement lamp came in, put the boxed lamp in a plastic bag and secure the bag at the top before placing it in the dumpster. These precautions will help keep the lamp from breaking right away, protecting you and the trash hauler. The Missouri Department of Natural Resources (DNR) encourages lamp recycling to safeguard human health and to limit the amounts of toxic heavy metals entering the environment.

Hazardous lamp management
If your business is a small quantity generator (SQG) or a large quantity generator (LQG) of hazardous waste and your lamps are hazardous, you can manage them as either hazardous waste or universal waste.

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http://www.dnr.state.mo.us/homednr.htm

PUB000720

The *universal waste rule*, found in 10 CSR 25-16.273, became effective in Missouri on Jan. 31, 1999 and is an alternative SQGs and LQGs may now use. If you manage your hazardous lamps as universal waste, you should read and become familiar with the requirements of both the state and federal universal waste rule. Contact DNR if you have questions.

Universal Waste

Unbroken hazardous lamps may be managed as universal waste rather than hazardous waste. The regulations vary for the size of the handler. A small quantity handler (SQH) can accumulate no more than 11,000 pounds of universal waste at any time. A large quantity handler (LQH) accumulates more than 11,000 pounds of universal waste at a time.

Universal waste handler requirements include

- ✔ Label containers with the words "Universal Waste – Mercury- Containing Lamp(s)" or "Waste Mercury-Containing Lamp(s)" or "Used Mercury-Containing Lamp(s)"
- ✔ Store waste for no more than one year unless you can prove the storage will facilitate proper recovery or disposal.
- ✔ Train employees on proper handling and emergency procedures.
- ✔ LQGs must register with DNR, store lamps so they are not easily broken and keep some records. LQG's have additional requirements for worker training, storage area ventilation and having a mercury cleanup system.

A universal waste transporter does not need a Missouri hazardous waste transporter license. Shipments are made according to U.S. Department of Transportation requirements. Shipping papers rather than a hazardous waste manifest may be used. Universal waste lamps may be sent to another universal waste handler, a universal waste destination facility or to a Missouri facility with a resource recovery certification to accept mercury lamps. If you send hazardous lamps out of Missouri, contact the environmental agencies in the states that the lamps will travel to learn their requirements.

Hazardous Waste

You must manage hazardous lamps as hazardous waste if they are broken or if you choose not to manage unbroken lamps as universal waste. See the guide sheet #13 on Hazardous Waste for more information.

Remember

- ➜ Fluorescent lamps may be hazardous waste.
- ➜ If you generate one or two waste fluorescent lamps infrequently, you may send them to a Missouri sanitary landfill. Contact the landfill first for permission.
- ➜ Do not break fluorescent lamps.
- ➜ Do not use small drum-type fluorescent lamp crushers. Doing so is illegal treatment.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- ✔ Purchase low-mercury lamps.
- ✔ Protect lamps from breakage.
- ✔ Recycle both hazardous and non-hazardous lamps.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
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September 1999

Preventing Pollution in the Vehicle Maintenance Industry - #12

FUEL TANKS

Used fuel tanks may present a risk of explosion or fire after being removed from motor vehicles. Most scrap metal recyclers will not accept whole tanks. Used fuel tanks will be accepted by most scrap metal recyclers if the tanks have been crushed, cut up, or have holes in them.

You should prepare used fuel tanks for recycling as soon as possible after removal from the vehicle to reduce the danger of fire or explosion. Drain fuel tanks as soon as possible. Remove the in-tank fuel pump, rubber, and wires. Prepare the used tank for recycling by crushing the tank carefully. Avoid any source of sparks or ignition. After you have drained and crushed the tank, it can be recycled as ordinary scrap metal.

If you must store whole, uncrushed tanks, be careful to store them safely. Do not store whole tanks in enclosed areas or near a spark or ignition source. Store whole tanks separately from other scrap metal.

Although Missouri does not have environmental regulations dealing with waste fuel tanks from vehicles specifically, you should take care to manage them in a way that will not cause harm to the environment or to public health.

If you store scrap metals outside, you will need to be particularly careful. What looks like a storage pile to you may look like a dump to someone else. To avoid potential problems, be careful that other wastes are not mixed with scrap metal and set up a regular schedule for removal. Check on city and county ordinances that may have requirements for storing materials outside.

REMEMBER

Fuel tanks can explode or cause a fire if not properly handled. Always keep them away from any source of spark or flame.

If you have a scrap pile, be sure it doesn't become a dump. Set up a schedule for collection, and keep recyclables separate from other materials.

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PUB000721

POLLUTION PREVENTION

Preventing pollution, instead of treating or disposing of it, can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Follow routine scheduled maintenance.

√ Check the fuel tank whenever the vehicle is on a hoist lift. Check for leaks. Check the condition of the tank support straps.

For more information call 1-800-361-4827 or write to
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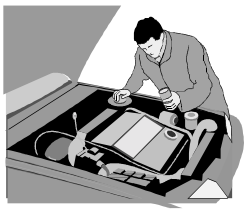
May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #13

HAZARDOUS WASTES



Most vehicle maintenance shops generate hazardous waste. It is very important that you determine if your wastes are hazardous and that you carefully follow the law when managing the wastes.

What is a Hazardous Waste?

A waste is a material you no longer use and will discard. It can be a solid, liquid or gas. A waste is hazardous if it has certain properties that could pose a danger to human health and the environment. Solvents and degreasers are examples of wastes that could be hazardous.

It is **your** responsibility to determine if your waste is hazardous. A waste is hazardous if

- It is listed as a hazardous waste in the federal regulations;
- It exhibits a hazardous characteristic;
- It is a hazardous waste by Missouri law; and/or
- It is a mixture of a listed hazardous waste and any other waste.

Listed Hazardous Waste - The federal government publishes lists of hazardous wastes. There are four different lists: The F list, the K list, the P list and the U list. Wastes that are on the P list are called "acutely hazardous" and are regulated more strictly then the others.

Characteristic Hazardous Waste - Some wastes that are not on the lists may still be regulated hazardous wastes because they have characteristics that make them hazardous. The four characteristics are

Ignitable - A waste with a flashpoint of less than 140 degrees F., or solids that catch fire easily and burn so rapidly they create a hazard. Some solvents are ignitable.

Corrosive - A waste with a pH less than or equal to 2.0 or greater than or equal to 12.5. An example is battery acid.

Reactive - Wastes that are normally unstable, react violently with water, can explode or release poisonous gases.

Toxic - Contains high concentrations of volatile organic chemicals, heavy metals or pesticides when tested by the Toxicity Characteristic Leaching Procedure (TCLP).

Missouri-specific Hazardous Waste - An individual state can regulate wastes as hazardous even if they are not on the federal list. For example, in Missouri certain dioxin wastes are regulated at smaller quantities than in the federal rules.

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PUB000722

Mixed Waste - If you mix any waste with a waste that is on the F-, P- o r K- lists, all of it is hazardous, even if there is a very small amount of listed waste.

Is Your Waste Hazardous? To determine if your waste is hazardous, check to see if it is on the lists of hazardous wastes or if it is a hazardous waste in Missouri. If it is not, you need to find out if it exhibits one or more of the hazardous characteristics. Check the material safety data sheet (MSDS) or contact your supplier for information. If you are unsure if your waste is hazardous, you may have it tested in a laboratory.

Managing Hazardous Wastes

There are very specific requirements for managing the hazardous waste from you business. The requirements you must meet depend on what and how much waste you generate. You will need to know how much acutely hazardous waste (P-listed) and non-acute hazardous waste you generate each month. You also need to know how much of each of these types of waste you accumulate at any one time.

What Type of Generator Are You?

There are three types of generators -- Large Quantity Generator (LQG), Small Quantity Generator (SQG) and Conditionally Exempt Generator (CEG). Here are some general guidelines to help you decide what type of generator you are:

If you generate in one month or accumulate at any one time . . .

- more than 1 kg (2.2 pounds) of acutely hazardous waste you are a LQG.
- 1,000 kg (2,200 pounds) or more of non-acute hazardous waste you are a LQG.
- more than 100 kg (about 220 pounds), but less than 1,000 kg (2,200 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a SQG.
- no more than 100 kg (220 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a CEG.
- In Missouri, anyone generating 1 gram or more of dioxin waste (2,3,7,8-tetrachlorodibenzo-p-dioxin) is a LQG.

The federal requirements for hazardous waste can be found in the Code of Federal Regulations, Title 40, Part 260 through Part 280 (40 CFR 260-280). The Missouri Hazardous Waste Law is in the Revised Statutes of Missouri (RSMo), Sections 260.350-260.552. The hazardous waste rules are in the Code of State Regulations, Title 10, Division 25 (10 CSR 25).

For more information call 1-800-361-4827 or write to
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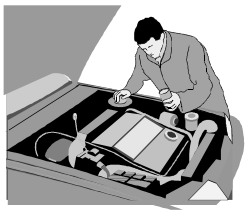
May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #14

HOSES and GASKETS



Vehicle maintenance shops often have waste hoses and gaskets from engine repair. Hoses and gaskets may contain residues of fluids and may need special handling. Some of these items may also be recyclable.

When you change hoses in a vehicle, the old hoses may still contain some liquid such as coolant. Some gaskets may also be very wet when removed from a vehicle. Liquids cannot legally go to a landfill. If your waste container has liquid in the bottom from items such as old hoses, the waste hauler may refuse to take it because of this restriction.

A simple way to drain hoses is to attach a clip to the shop wall in an out of the way place. Clip the top of the hose, making sure it is still open to the air. Put the bottom end into a container. It may take overnight to completely drain. Keep separate containers for antifreeze, used oil and any other common automotive fluids. The drained material can be added to recycling batches.

REMEMBER:

Liquids cannot be sent to the landfill.

POLLUTION PREVENTION:

√ Never mix fluids unless they are usually recycled together. Mixing could change a recyclable substance into a hazardous waste.

√ Do not put liquids into trash containers.

√ Replace hoses and gaskets when recommended by manufacturer.

May 1997

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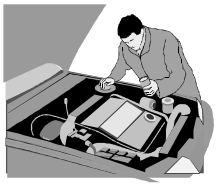
Preventing Pollution in the Vehicle Maintenance Industry - #15

LEAD-ACID BATTERIES



(In this document the term “battery” means lead-acid battery.)

Lead-acid batteries from motor vehicles contain materials that can pose a risk to people and the environment. These batteries contain sulfuric acid, lead and other materials that can be hazardous. The hazardous waste regulations have an exemption for persons who generate, transport or collect spent automotive lead-acid batteries, or who store them but do not reclaim them. Generally, reclaiming the batteries means cracking or smelting the batteries. Reclaiming begins when battery casings are cracked or broken. Non-leaking batteries are not considered hazardous waste. Haulers must meet Department of Transportation (DOT) requirements for transporting hazardous materials. Cracked or leaking batteries must be managed as hazardous waste. See the guide sheet on Hazardous Waste for more information.

Batteries can also be managed under Missouri’s universal waste rule. The current recycling program for lead-acid batteries, under the hazardous waste exemption, is extremely successful and the requirements are less stringent, so lead-acid batteries will probably not be handled as universal waste. However, in the future, as the formulations of automotive batteries change, the battery may be a hazardous waste but not a lead-acid battery. If this occurs, the universal waste rule will be a more widely used option for the management of these batteries. Please contact the Technical Assistance Program if you need information on universal waste.

Used lead-acid batteries are banned from sanitary landfill disposal in Missouri. Do not put them in your trash or dumpster. You must send the batteries to a recycling facility, a resource recovery facility or a permitted lead smelter.

If you store batteries, it must be in a way that protects human health and the environment. The safe storage of batteries begins with a suitable location. Batteries should be stored indoors or under cover to keep them dry and to prevent damage to the casings caused by freezing and thawing. Batteries should not be stored near combustibles, such as gasoline, and the storage area needs to be well ventilated. Precautions should be taken to contain spills. One way is to store batteries on or above a sealed concrete floor with a curb. Storage of batteries outdoors requires a storm water permit from the department.

If you are storing batteries, you should have written procedures for handling spills or leaking or cracked batteries. Spills should be neutralized with a material such as agricultural lime, baking soda or a commercial spill kit and be cleaned up immediately. Cracked or leaking batteries should be placed in a container impervious to acid, such as a five-gallon plastic bucket. Anyone handling the batteries or spilled material should wear protective clothing, gloves and eyewear. An eye wash sink or eye flush kit should be available.

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PUB000724

The *Missouri Solid Waste Management Law* requires battery wholesalers and retailers to accept used batteries from their customers in quantities at least equal to the number of new batteries sold. If you sell a battery to someone, you must take their old battery if they want you to. You must then arrange for those batteries to be recycled. Batteries cannot be stored longer than 90 days unless you get approval from the Misssouri Department of Natural Resources (DNR).

The law also requires anyone selling batteries at wholesale or retail to post a sign about recycling batteries. The sign has to be four inches by six inches or larger and must say "It is illegal to discard a motor vehicle battery or other lead-acid battery. Recycle your used batteries. State law requires us to accept used motor vehicle batteries, or other lead-acid batteries for recycling, in exchange for new batteries purchased."

(The part of the law dealing with lead-acid batteries is §260.260-260.266, *Revised Statutes of Missouri*.)

Remember

Don't put batteries in the trash. Batteries must go to a recycling facility, a resource recovery facility or a permitted lead smelter. They cannot go to a landfill.
If you sell a battery to someone, you must take their old one if they want you to.
You cannot store used batteries longer than 90 days without DNR approval.
Battery acid may be a hazardous waste.
If you sell batteries, you must post a sign with specific language about recycling.

Pollution Prevention

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- ✔ Store batteries where they will not be damaged or frozen.
- ✔ Store batteries so that leaks will be caught and contained.
- ✔ Anchor batteries when transporting.
- ✔ Use long-life batteries.
- ✔ Inspect stored batteries regularly for cracks or leaks before they become a problem.

For more information call 1-800-361-4827 or write to
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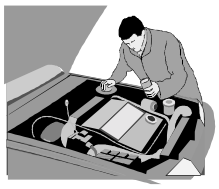
September 1999

Preventing Pollution in the Vehicle Maintenance Industry - #16

PARTS WASHERS



Various types of parts washers are available for removing dirt and lubricants. Most systems use either solvent or water-based cleaners. Depending on the cleaner used and the items being cleaned, the waste from parts washers may be hazardous.

SOLVENT WASHERS - Many shops use solvents for cleaning parts. Some of these solvents are hazardous waste. If you don't know whether your solvent is a hazardous waste, check the Material Safety Data Sheet (MSDS) or ask your supplier. You can get an MSDS from the manufacturer of the solvent. Even if the solvent is not hazardous, the used solvent could be hazardous because of contamination from the parts you clean. Your supplier may be able to provide information on typical contaminants, or you may need to have the waste solvent tested. See the guide sheet on Hazardous Waste for more information.

Some shops use solvent-distillation units, sometimes called "stills." These units remove contaminants so you can reuse the solvent. You must get a Resource Recovery Certification from DNR if you recycle more than 2,200 lbs. of hazardous waste in a month. If you recycle smaller amounts, you need to notify DNR of your recycling activities. The sludge, used filters and still bottoms from these units are regulated as hazardous waste.

WATER-BASED WASHERS - Many water-based parts washers are available. Typically these are closed units which use very hot water and detergents with rust inhibitors. They work very much like home dishwashers. The units are often designed to filter oil and impurities from the water during operation.

If you have or are thinking of using this type of washer, you must still be concerned about hazardous waste issues. Check the MSDS or contact the supplier to learn if the detergent is regulated as a hazardous waste. Also, just as with solvent units, the contamination from the parts you are cleaning could cause the waste to be hazardous. You may need to have the wastewater, filters or sludges tested to determine if they are hazardous.

If you plan to put wastewater from your parts washer down the drain, contact your sewer system personnel to make sure it is okay with them. Do not discharge the wastewater directly to the environment, unless you have a permit to do so from DNR.

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PUB000725

REMEMBER

Solvents or detergents used in parts washers may be regulated as hazardous waste.

Contaminants from dirty parts can cause waste solvent or wastewater to be hazardous.

You must notify DNR if you recycle hazardous waste (such as some solvents) on-site. If you recycle over 2,200 lbs. in a month, you must get a Resource Recovery Certification.

Check with your sewer plant to see if it is alright to pour wastewater from your parts cleaner down the drain.

Never discharge wastewater to the environment, unless you have a permit from DNR to do so.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Look for alternatives to hazardous solvents such as water-based parts washers.

√ Close the lid on your parts washer and turn off the spray nozzle when not in use. This will decrease evaporation of solvent.

√ Consider a solvent distillation unit ("still"). These units can extend the life of the solvent, saving raw material expense and hazardous waste disposal costs.

√ Before exchanging solvent, make sure it is too dirty for reuse. Use slightly dirty solvent for initial rinsing of parts and clean solvent for final cleaning.

√ Maintain parts washers. Check to make sure seals are tight and there are no leaks.

√ Drain parts before removing them from the solvent sink or parts washer.

For more information call 1-800-361-4827 or write to
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Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #17

RADIATORS

Used radiators may contain materials such as lead, transmission fluid, and antifreeze which are harmful to both people and the environment. Metal radiators may have value as scrap metal. Radiators must be properly prepared before some scrap metal recyclers will accept them.

Before storing, recycling or disposing of radiators, take care to drain the liquid from the radiator. Be careful to avoid spills and to clean up any spills immediately. Antifreeze and radiator sludge may have contaminants that cause it to be regulated as hazardous waste. Antifreeze from late-model cars or trucks is not considered a hazardous waste in Missouri. However, antifreeze from heavy equipment or industrial sources may be regulated as a hazardous waste. See the guide sheet on Antifreeze for more information.

Separate radiators which have been prepared for recycling from those which have not been cleaned/prepared to avoid sending dirty radiators to the scrap metal recycler.

If you store scrap metals outside, you will need to be particularly careful. What looks like a storage pile to you may look like a "dump" to someone else. To avoid potential problems, be careful that other wastes are not mixed with scrap metal and set up a regular schedule for removal. Check on city and county ordinances that may have requirements for storing materials outside.

REMEMBER

If you have a scrap pile, be sure it doesn't become a "dump." Set up a schedule for collection, and keep recyclables separate from other materials.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Repair used radiators when possible.

√ Follow routine scheduled maintenance. Check antifreeze solution regularly to prevent acid and corrosion buildup in the radiator.

May 1997

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1-800-361-4827

PUB000726

Preventing Pollution in the Vehicle Maintenance Industry - #18

SHOP TOWELS

Vehicle maintenance shops often use shop towels (either cloth or paper) for a variety of purposes. Often, the towels are used for cleaning or degreasing. Discarded shop towels may be contaminated with hazardous wastes, causing them to be hazardous waste.

Often, cleaning solvent is put on a shop towel which is then used to wipe a surface. Sometimes the solvent is applied to the surface which is then wiped off with a shop towel. Some of the solvents used are hazardous waste, and when the solvent is put on the shop towel the shop towel then becomes hazardous waste. Also, the material being cleaned off of the part may be a hazardous waste, which may cause the shop towel to become a hazardous waste.

The best way to deal with this issue is to prevent the problem. If you use nonhazardous cleaning solvents, the solvent won't cause the towel to become hazardous.

If contaminated towels or rags used for cleaning are laundered and reused, they are not regulated as a solid waste or as a hazardous waste. You should notify your laundry if there is solvent contamination on the shop towels and be certain they are able to handle that type of material. If you launder your own shop towels, be sure to contact your wastewater treatment plant to find out if they can accept the wastewater discharge you are sending them, or if you need to do some type of pretreatment. Do not launder contaminated shop towels if the wastewater does not go to a treatment plant.

If you use shop towels to clean up spills of hazardous waste, the shop towels are hazardous waste and must be disposed of at a permitted hazardous waste treatment, storage or disposal facility. See the guide sheet on Hazardous Waste for more information. You should not launder towels or rags used to clean up spills of hazardous waste.

If you plan to throw away any contaminated shop towels or rags, you need to determine if they are hazardous waste. If the shop towels are hazardous you must comply with the regulations for management, storage, transport and disposal of hazardous waste. If they are nonhazardous you may send them to a sanitary landfill. Landfills cannot accept liquids, so be sure to collect (and recycle) any liquid from your shop towels.

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1-800-361-4827

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REMEMBER

Shop towels used to clean up spills of hazardous waste must be managed as hazardous waste.

Shop towels contaminated with hazardous waste are hazardous waste.

If contaminated shop towels used in cleaning or degreasing are laundered and reused, they are not waste. Notify the laundry of any solvent contamination.

If you are throwing away contaminated shop towels, you must determine if they are hazardous waste and follow the regulations that apply. (See guide sheet on Hazardous Waste.)

POLLUTION PREVENTION

Preventing pollution (instead of treating or disposing of it) can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Use non-hazardous cleaners and solvents.

√ Don't use shop towels to clean up spills. Use drip pans to prevent spills and appropriate absorbents for cleanup.

√ Use the least amount of solvent needed.

√ Collect and recycle solvents from contaminated shop towels. You can use a wringer to remove the liquid or simply allow the towels to drain over a container. Reuse solvents if possible.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #19

PETROLEUM STORAGE TANKS

Some vehicle maintenance facilities may have storage tanks containing oil or fuel. These tanks have the potential for leaking and spilling oil or fuel, causing harm to the environment. Storage tanks, depending on size, usage or type, are regulated by several agencies.

Aboveground Storage Tanks (ASTs)
Federal law requires you to have a Spill Prevention Control and Countermeasure (SPCC) Plan if you have an oil or used oil storage tank located where it could contaminate water with spilled oil, for example on or near a stream, lake or river. You also need a SPCC plan if you have
✔any single aboveground storage container with a capacity over 660 gallons,
✔aboveground aggregate storage capacity over 1320 gallons, or
✔ total underground storage capacity over 42,000 gallons.

The basic requirements of an SPCC plan include what you do to prevent spills, how you plan to contain any spills and how you plan to remove and dispose of the oil or fuel if you have a spill. Also, the storage tanks must be in a containment area. Aboveground petroleum product storage tanks at a service station or a bulk terminal are regulated by the Missouri Department of Agriculture. If your business includes these operations contact them at

Missouri Department of Agriculture
Division of Weights and Measures
P.O. Box 630
Jefferson City, MO 65102
(573) 751-4278

Underground Storage Tanks (USTs)
If you have an underground storage tank (UST) larger than 110 gallons, you must register that tank with the Missouri Department of Natural Resources (DNR) whether or not the tank is in use, unless the tank was taken out of service before January 1, 1974. There are requirements in Missouri for the way new tanks are to be constructed and installed. Existing tanks were required to meet these requirements or be properly closed by December 22, 1998. If you are planning to install a new UST, you must notify DNR at least 30 days before you use the tank. All USTs must have an approved method of release detection.

You must notify DNR by calling (573) 634-2436 as soon as possible within 24 hours of a suspected release from your UST. Spills and overfills must be immediately contained and cleaned up.

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If you plan to take your UST out of service temporarily or permanently, or if you want to use it for something besides petroleum products, contact the department for information on what you need to do.

Owners and operators of petroleum USTs must demonstrate financial responsibility for releases of products from the tanks. Several options are available for demonstrating financial responsibility. Missouri has a Petroleum Storage Tank Insurance Fund, which provides for cleanup of contamination from both AST and UST releases. Your tanks may be eligible for benefits from this fund.

REMEMBER

If you have an underground storage tank larger than 110 gallons you must register it with DNR even if it isn't being used.

If you store large quantities of oil or waste oil, you need a Spill Prevention Control and Countermeasure (SPCC) Plan.

Spills must be reported to DNR as soon as possible within 24 hours.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Prevent overfilling and spilling.

√ Label tank contents to prevent mixing.

√ Properly maintain tanks to prevent corrosion.

√ Place tanks where leaks can be easily contained without entering the environment.

√ Inspect tanks daily for leaks and spills.

√ Maintain appropriate spill containment equipment and train employees on proper usage.

√ Clean up spills as soon as possible.

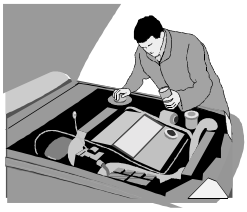
√ Close out unused or out-of-service USTs in accordance with DNR regulations.

For more information call (800) 361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102-0176

February 1999

Preventing Pollution in the Vehicle Maintenance Industry - #20

USED OIL DISPOSAL AND RECYCLING



Improper disposal of used oil can cause damage to the environment and result in costly clean up. In Missouri, there are certain things you must do and certain things you cannot do when managing used oil from your business.

You cannot dispose of used oil at a landfill or with your regular trash. You cannot dispose of your used oil into the environment or create a public nuisance. You cannot use used oil for dust suppression or killing weeds on gravel roads, parking lots or elsewhere.

Used oil is regulated under the federal and state hazardous waste laws and regulations. If you recycle your used oil, it is regulated under special used oil regulations. Recycled used oil includes oil that is re-refined, reclaimed, reprocessed or burned for energy recovery. If you do not recycle your used oil, it is regulated as a hazardous waste. The waste code for used oil in Missouri is DO98. See the guide sheet on Hazardous Waste.

Off-Site Shipments of Used Oil. Used oil must only be hauled by transporters who have EPA identification numbers and Missouri licenses. Contact DNR for a list of transporters with Missouri licenses.

You can transport your own used oil if
- you transport 55 gallons or less at any time.
- it is your own used oil or used oil accepted from do-it-yourselfers or exempt farmers.
- you take the oil to an used oil collection center or used oil aggregation point
- you use your own vehicle or an employee's vehicle.

Mixing other wastes with used oil: Be very careful what you mix with used oil. The regulations do allow mixing of certain ignitable hazardous waste with used oil if the mixture you end up with is not ignitable. However, if the hazardous waste is hazardous for some reason besides being ignitable (for example if it's also a listed hazardous waste), mixing it with your used oil will make your used oil a hazardous waste. For example, mixing your F-listed spent solvents with used oil will cause all of the oil mixture to be hazardous waste. See the guide sheet on Hazardous Waste for more information.

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PUB000729

Burning Used Oil in On-Site Space Heaters. In your shop you may burn your own used oil, oil from do-it-yourselfers, and oil from farmers who generate fewer than 25 gallons per month in specially-designed used oil space heaters. Used oil space heaters must have a capacity of 500,000 BTU per hour or less and be vented outside. You do not need to notify the department if you are burning used oil, but you must notify the department if you are collecting used oil from do-it-yourselfers or farmers. See the guide sheet on Used Oil From Do-It-Yourselfers.

If you are a small quantity or large quantity generator of hazardous waste you cannot burn any mixture of used oil with hazardous waste in a used oil space heater. If you are a conditionally exempt generator of hazardous waste that is hazardous only because it is ignitable, you may mix it with your used oil for burning. However, this can damage the space heater and release hazardous emissions into the environment. Before adding anything to your used oil, check with your used oil transporter or used oil space heater manufacturer to make sure that practice is acceptable.

REMEMBER

You cannot send used oil to the landfill or pour it out onto the ground.

If you are not recycling your used oil, it is a hazardous waste.

If someone else is hauling your used oil, they must have an EPA identification number and be registered with DNR.

You may burn your own used oil in a used-oil burner smaller than 500,000 BTU/hour that is properly vented.

You may collect and burn used oil from do-it-yourselfers (DIY) or exempt farmers, but you must first notify the department that you are a DIY used oil collection center.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Keep used oil separate from other wastes.

√ If you remove oil-laden parts, place them on a drip pan rather than the floor.

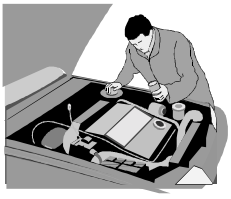
√ Do not use the oil drip pan to collect antifreeze or solvent.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - # 21

USED OIL FILTERS



A short time ago, the majority of used oil filters were disposed of in landfills. Today, millions of filters are recycled. Oil filters are generally made from paper, metal and rubber. Used oil filters have value because they can be burned for fuel and/or the metal components can be recycled. Businesses throughout the country are choosing to recycle, rather than meet minimum standards for filter disposal.

After the filter has been removed from the vehicle, you must remove residual oil before disposal or recycling. You can remove used oil from filters by -
1) puncturing the filter anti-drain back valve or dome end and hot-draining
2) hot draining and crushing
3) dismantling and hot-draining or
4) any other hot-draining method that will remove used oil.

Hot-draining is draining the oil from the filter for 12 hours at near-engine operating temperatures and above 60 degrees Fahrenheit. You can send oil filters that have been hot-drained to a sanitary landfill for disposal. The oil removed from oil filters must be properly collected and managed as used oil. Undrained oil filters must be shipped with transporters who have a Missouri license and a U. S. EPA identification number.

Recycling used oil filters saves natural resources and helps protect the environment. Two general recycling options exist. The entire filter can be burned for fuel, or the parts of the used filter can be separated, with the scrap metal being recycled and the paper and rubber burned as fuel.

Scrap steel processing or recycling facilities, as well as steel smelters, can recycle the metal components of the filter. Some accept whole or crushed filters, while others only accept the metal components. Used oil filters can also be sent to industrial burners (such as cement kilns) where the entire filter, or just the paper and/or rubber components, can be burned for fuel.

Scrap metal dealers may accept crushed filters for recycling. There are also companies that specialize in oil filter recycling. The Filter Manufacturers Council established a Used Filter Hotline in 1994. You can call 1-800-99-FILTER (993-4583) to get a list of companies that supply filter management services.

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PUB000730

The legal requirements for managing used oil filters can be found in the federal regulations, 40 CFR 261.4(b)13.

REMEMBER

Used oil filters must be properly drained before they can be recycled or sent to the landfill.

Used oil drained from filters must be collected and managed properly (see guide sheet on Used Oil).

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ When removing the oil filter, use a drip pan under the vehicle to catch oil spills.

√ When draining filters, carefully collect the oil to avoid spills.

√ To prevent spills, put filters on a tray or in a container before moving them.

√ Store filters in a container large enough to hold any used oil that might seep from the filters. Some shops use mobile oil filter-draining containers on wheels for clean, easy transporting.

√ Empty the mobile containers into the used oil storage container routinely to avoid overflow.

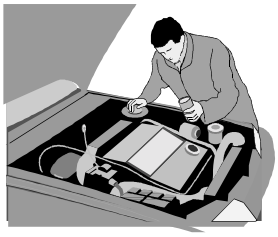
√ Recycle used oil filters through a scrap metal or used oil filter recycler.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #22

USED OIL FROM "DO-IT-YOURSELFERS"



Many people choose to change their own vehicle oil. In the United States, an estimated 200 million gallons of used motor oil are improperly disposed of by do-it-yourselfers. Vehicle maintenance facilities can accept oil from do-it-yourselfers (called DIY used oil) if they follow a few basic requirements. This service can help protect the environment by giving people an easy way to safely manage their DIY used oil.

If you are a used oil generator, you can accept used oil from householders and from farmers who have less than 25 gallons of used oil a month (called "exempt farmers"). Missouri's regulations require that you first notify the Missouri Department of Natural Resources that you want to be a DIY used oil collection center. To do this, send a letter that includes

- Name and location of the collection center,
- Name and phone number of the owner/operator. If there is a different person serving as facility contact, include that person's name and phone number,
- Type of collection center (DIY), and
- Dates and hours of operation.

Send the letter to the DNR Hazardous Waste Program, PO Box 176, Jefferson City, MO 65102.

If you operate a DIY used oil collection center, you must comply with the used oil generator requirements. (See **USED OIL** guide sheets.) You also need to control public access to the used oil storage tank. You can do this by having an attendant present during business hours and limiting after hours access to the tank by a barrier such as a fence or locating the tank inside a locked building. You cannot store DIY used oil longer than twelve months.

You can burn used oil collected from do-it-yourselfers and exempt farmers, along with your own oil, in an on-site space heater. If you ship it off-site, manage it the same as your own used oil. Inform businesses that they cannot use the DIY collection tank. Businesses who generate used oil must comply with the used oil generator requirements just as you do.

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One concern is that homeowners may add other substances to their used oil. Fortunately, surveys of used oil collection programs show that is very rare. However, used oil can become contaminated with chlorinated solvents from brake and carburetor cleaners. You can use inexpensive test kits or halogen leak detectors to check for contamination. You may wish to check the DIY oil as it is brought in. Another way to limit liability is to provide a separate tank or container for do-it-yourselfer used oil. You can test the used oil for contamination before adding it to a larger used oil storage tank. That way, if contamination occurs it will be limited to a small volume and disposal costs will be less. Work with your used oil hauler to develop a plan for what to do if a load of used oil is contaminated.

Although it is not required, some facilities choose to keep a collection log, having customers sign it with the date, their name and address and the amount of used oil brought in.

REMEMBER

To accept used oil from do-it-yourselfers, you must

comply with used oil generator requirements, **AND**

notify the Missouri Department of Natural Resources, **AND**

control access to the used oil storage tank, **AND**

store the used oil for no longer than 12 months.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Have facility personnel, rather than customers, add used oil to the collection tank to prevent spills. Handle used oil as little as possible.

√Keep an assortment of pads and socks on hand to absorb oil spills.

√ Have trash cans available for used DIY containers. Encourage customers to reuse containers.

√Post warnings against mixing and ask customers if their used oil has been mixed with anything.

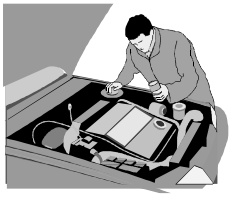
√Post a sign describing the types of oil that you will and will not accept.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #23

USED OIL STORAGE



Improper storage of used oil can increase the risk of spills and leaks that could harm the environment and prove costly to clean up. In Missouri, there are some legal requirements for storing used oil from your business.

If you store used oil, you must

- label the storage container(s) with the words "Used Oil."

- keep containers in good condition.

- do not store used oil collected from do-it-yourselfers longer than 12 months.

- keep containers closed if they are exposed to rain or snow (except when removing or adding used oil).

- inspect storage areas regularly for leaks or spills.

- if a container is leaking, fix it immediately or move the oil to another container.

To help prevent spills, you may wish to put your used oil containers in a "secondary containment" structure. Secondary containment is the name used to describe a structure or container that holds the storage tank and can hold the liquid if the storage tank leaks. The secondary containment should have a volume at least as large as the largest container OR 10% of the total volume of all the containers, whichever is greater.

If you are storing a large amount of oil (one tank over 660 gallons or a total of over 1320 gallons) you are required to have spill prevention measures. Contact the Missouri Department of Natural Resources for more information on what you must do.

Your community or county may have specific requirements for storing oil. Check with local authorities, particularly your fire department.

The department recommends not storing used oil in underground tanks.

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Technical Assistance Program
1-800-361-4827

PUB000732

Storing containers on an impervious surface (like sealed or treated concrete) helps contain spills and makes clean up easier. Some shops store their used oil containers on pallets or slightly elevated in some way to make it easier to spot spills or leaks.

Clean up any spills immediately. Petroleum spills (including oil) over twenty-five gallons must be reported to the DNR.

The legal requirements for used oil storage can be found in 10 CSR 25, Chapter 11 of the Missouri Code of State Regulation and in the federal regulations, 40 CFR Part 279.

REMEMBER

Label storage containers and keep them in good condition.

Inspect storage areas regularly. Fix leaks immediately or move the oil to another container.

If containers are exposed to rain, keep them closed except when adding or removing used oil.

Check with local authorities to learn if there are local requirements.

Oil spills of 25 gallons or more must be reported to DNR.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Keep used oil separate from other wastes.

√ Have separate storage containers for antifreeze, solvents or other fluids that could accidentally be mixed with used oil.

√Use large drum funnels or fill tubes when filling used oil drums. Store funnels on a drip pan to collect dripping oil.

√ Clean spills with a rag or mop that can be wrung-out and reused. A biodegradable soap and water solution may be used to clean up oil sheens.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #24

WASTE TIRES

Repair shops and tire retailers remove old or damaged tires to install the new ones they sell. Tires that are too damaged or worn for use as vehicle tires are waste tires. Since 1990, the storage, hauling and disposal of waste tires have been regulated under Missouri's Solid Waste Management Law.

Storage – Waste tires must be stored in a way that does not cause pollution, health or nuisance problems. Since tires can collect water and create breeding grounds for mosquitoes, you should protect your storage area from rainwater or provide some other way to control mosquitoes. Tires may also pose a fire hazard, so they should always be stored away from ignition sources.

Store tires intended for resale or retreading separately from waste tires. Tires intended for resale or retreading are not regulated as waste tires. Anyone storing 25 to 499 tires is regulated as a waste tire collection center and must meet certain requirements. See the guide sheet on Waste Tire Collection Centers for more information.

Anyone who stores 500 or more tires must have a permit from the Missouri Department of Natural Resources (DNR) as a waste tire site and as a waste tire processor.

Hauling – Anyone who hauls 25 or more waste tires at a time must get a permit from DNR. However you or other employees from your business do not need a permit to haul tires generated from your business. The tires may be hauled to a tire processor, waste tire site, another tire hauler or to a landfill (if they are cut, chipped or shredded).

A tire hauler's permit is good for one year and only applies to the person or business to which it is issued. Check the expiration date and name on the permit to be sure it is valid. To get the list of permitted waste tire haulers or check the permit status of a hauler who picks up tires at your shop, contact DNR or check Solid Waste Management Program's Web page.

Recordkeeping – You should keep a record of how many tires are taken in and removed from your shop each month. Include the name of the hauler and the date the tires were removed. You may contact DNR to get a recordkeeping form.

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Technical Assistance Program
1-800-361-4827
http://www.dnr.state.mo.us/homednr.htm

PUB000733

Beneficial Reuse – Sometimes a person wants a few waste tires for a home project or farm erosion control. If someone wants to use over 100 tires in one year, they need to get approval from DNR. Individuals can haul their own waste tires for their own use.

Disposal – Never burn tires in Missouri. Even in areas where home waste burning is allowed, burning tires is prohibited.

You cannot dispose of tires in a landfill unless the tire is cut up in three pieces or in half circumferentially (forming two circles). Special equipment is usually needed to cut tires for disposal. There are places to legally take your waste tires in Missouri. They usually charge a fee per tire and can accept whole tires. Contact DNR for a list of sites.

Uses for waste tires – There are options for using waste tires rather than disposing of them. Waste tire chips can be used for many things such as mulch on playgrounds or as fuel in electrical plants. Contact DNR for information on reuse and recycling options.

The legal requirements for waste tires can be found in §260.270-278, *Revised Statutes of Missouri* (RSMo) and in 10 CSR 80, *Chapter 8 of the Code of State Regulations*.

REMEMBER

- ➜ Do not burn waste tires.
- ➜ Waste tires cannot go to the landfill unless they are cut into three or more pieces or in half circumferentially (in two circles).
- ➜ If you wish to store 25 or more waste tires, you must follow requirements for waste tire collection centers (see guide sheet #25 on waste tire collection centers).
- ➜ Anyone hauling waste tires for financial benefit needs a permit from DNR, unless hauling their own tires.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- ✔ Avoiding fast starts and stops
- ✔ Driving at a moderate rate of speed
- ✔ Properly inflating tires
- ✔ Properly balancing and aligning wheels
- ✔ Buy and sell retreaded tires. Selling retreads creates a market for used tire casings and keeps them from disposal.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102-0176

September 1999

Preventing Pollution in the Vehicle Maintenance Industry - #25

WASTE TIRE COLLECTION CENTER

In Missouri, the law requires anyone dealing with waste tires to follow certain rules. The guide sheet "Waste Tires" has general information about managing waste tires in Missouri. This guide sheet summarizes the requirements that you must meet if you have over 24 but less than 500 tires. Anyone storing 25 to 499 tires in Missouri is a waste tire collection center and must meet the following requirements.

Storage - Waste tires must be stored in a way that does not cause pollution, health or nuisance problems. If you operate a waste tire collection center you must comply with the following.

Fire protection - You must meet local and national fire protection standards for storage of rubber tires. Contact your local fire department for information on what those requirements are.

Location – You cannot store tires in a wetland, sinkhole or floodplain.

Vector control – Store tires in a way that is "unfavorable for the harboring, feeding and breeding of vectors." In other words, you need to store waste tires so that mosquitoes, rats and other insects or animals do not cause a problem. To do this you must do one of the following:

- ✔ Drain any water out of the tires or store them indoors or under cover, or
- ✔ Cut or "alter" the tires so they cannot hold water, or
- ✔ Treat the tires with mosquito pesticides, or
- ✔ Get prior approval from DNR for any other method of control that you wish to use.

Recordkeeping – If you operate a waste tire collection center, you must keep a record of the following information:

- ✔ The number of waste tires accumulated each month,
- ✔ The number of waste tires removed each month,
- ✔ Where the waste tires went,

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1-800-361-4827
http://www.dnr.state.mo.us/homednr.htm

PUB000734

- ✔ The name and permit number of the waste tire haulers bringing tires to your site or taking them away, and
- ✔ Records of vector control activities (for example, when you spray with pesticide).

You must keep the records for at least three years. The department has recordkeeping forms for waste tire collection centers that you may use if you wish. To get a copy of the forms, contact the Department of Natural Resources.

Disposal – Never burn tires in any part of Missouri. Even in areas where home waste burning is allowed, burning tires at home is prohibited.

You cannot dispose of tires in a landfill unless the tire is cut up in three or more pieces or in half circumferentially (cut into two circles). Special equipment is usually needed to cut tires for disposal.

The legal requirements for waste tires can be found in §260.270-276, *Revised Statutes of Missouri* and in 10 CSR 80, *Chapter 8 of the Code of State Regulations*.

REMEMBER

- ➜ Anyone storing 25-499 tires is a waste tire collection center and MUST meet the requirements under the law.
- ➜ Do not burn waste tires.

Pollution Prevention Options

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- ✔ Educate customers on how to extend the life of tires.
- ✔ Be cautious when using pesticides. Follow label directions exactly and use only the amounts needed.
- ✔ Follow storage requirements carefully to prevent fires and to protect the environment.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102-0176

September 1999

Preventing Pollution in the Vehicle Maintenance Industry - #26

WASTEWATER

Vehicle maintenance shops generate wastewater during daily operations. Some sources of wastewater include hot tank solutions and rinse water from parts cleaners and general shop floor clean-up. These wastewaters may contain metals that can cause them to be hazardous or they may be corrosive hazardous wastes. They may also contain oils, greases, solvents and detergents.

Most communities provide sewer collection and wastewater treatment facilities. If your business is connected to a sewer and treatment plant, contact them to explain the materials you wish to dispose of in the sewer system. You may need to pretreat the wastewater in some way before putting it in the sewer. For example, an oil/water separator or treatment for a particular contaminant may be required. By pretreating your wastewater, you help assure the community's sewer and treatment system continues working for everyone.

In areas where a wastewater treatment facility is not available or cannot take your water, you must carefully control the management of the wastewater from your shop. If the wastewater is hazardous, you must manage it as a hazardous waste and send it to a permitted hazardous waste facility (see the guide sheet on hazardous waste). If it is not hazardous, you can take it to an approved wastewater treatment plant. Also, if the wastewater is not hazardous you may be able to treat it yourself and discharge the water, but this will likely require a permit from DNR to assure that the treatment process you want to use will properly treat your wastewater.

If you cannot connect your shop to a wastewater treatment plant, you may be able to discharge domestic wastewater (from restroom or kitchen facilities) to a septic system depending on the amount of wastewater. But you will still need to collect any industrial wastewater (from parts washers, floor cleaning, etc.) and manage it as described above. Do not put your industrial wastewater down the drain if you are not connected to a sewer and treatment plant and have permission from the plant.

Management practices that reduce, reuse, and recycle the wastewater will greatly reduce your disposal costs and will help protect sewer systems and treatment plants. See the section on pollution prevention for some suggestions.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Technical Assistance Program
1-800-361-4827

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REMEMBER

If your shop is connected to a sewer system and treatment plant, contact the treatment plant to find out if you can put your wastewater down the drain. You may need to pretreat your wastewater before it goes to the treatment facility.

If your shop is not connected to a sewer system and treatment plant, you can

- Get permission from DNR to treat the wastewater yourself and discharge it, OR
- Collect the industrial wastewater and determine if it is hazardous waste. If it is hazardous waste, send it to a permitted hazardous waste facility. If it is not, you can take it to an approved wastewater treatment plant.

Do not send wastewater from your shop (except restroom or kitchen waste) to a septic system.

NEVER let wastewater from your shop go onto the ground, down a storm drain, or into a body of water unless you have approval from DNR.

POLLUTION PREVENTION OPTIONS

Preventing pollution can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Collect and recycle petroleum-based fluids such as used oil, transmission fluid and brake fluid.

√ Collect and recycle coolants from radiators.

√ Reuse dirty rinse water as make-up water in a hot tank or jet spray washer to pre-rinse parts.

√ Use drip pans to catch leaks before they hit the floor.

√ Use absorbents to clean up minor fluid leaks and spills.

√ Sweep floors prior to washing.

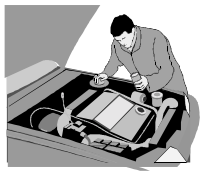
√ Accumulate all sludges in a closed, marked container. Determine if they are hazardous waste and dispose of properly.

For more information call 1-800-361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

May 1997

Preventing Pollution in the Vehicle Maintenance Industry - #27

BACKFLOW PREVENTION



Whether your business uses water from the public water supply or you have a private water supply such as your own well, it is important that you avoid contaminating that water. In some situations, water - and any contaminants it has contacted - can flow backwards in a water line. This can contaminate the water in your building and even the entire water supply. Backflow prevention devices prevent this problem.

If you have places where the water line comes into direct contact with a potential contaminant, the contaminant can travel back into the water line when there is a change in pressure. This is called a cross-connection. For example, if process water from your parts washer or even car wash area flowed back into your water system, your entire water system could become contaminated with chemicals and dirt. Backflow prevention devices or assemblies are installed in water lines to keep this from happening. They are placed in water lines entering the building and at points in the water system where it connects to a potential source of contamination.

If your business is connected to a public water supply, state regulations require that you protect the public water supply from cross-connections within your premises. If your operation could cause contamination to the water supply, you must have backflow prevention devices in place.

Drinking water regulations require that the backflow prevention assembly be placed on the water service line. It is a good idea to put additional backflow prevention devices at any location in your business where contamination could occur.

Your local water supplier may have additional requirements regarding backflow prevention. Contact that office to find out.

Even if your business is not connected to a public water supply, you should install backflow prevention devices to protect your employees, your customers and yourself from the risk of contaminated drinking water and to prevent pollution.

The Department of Natural Resources maintains a list of approved backflow prevention assemblies. To get a copy, call TAP at (800) 361-4827.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Technical Assistance Program
(800) 361-4827

PUB000584

REMEMBER

Preventing backflow into the water system protects you and anyone using your water supply.

If you are connected to a public water supply system, you may be required to have backflow prevention assemblies or devices.

For more information call (800) 361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102-0176

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